

## CLAIMS:

1. Vehicle headlamp provided with a metal halide lamp comprising a discharge vessel surrounded by an outer envelope with clearance and having a wall which encloses a discharge space containing Xenon (Xe) and a filling of ionizable particles, wherein in said discharge space two electrodes are arranged whose tips have a mutual interspacing so as to  
5 define a discharge path between them, characterized in that said vehicle headlamp comprises means to vary the spatial distribution of the ionizable particles inside the discharge vessel, such that said spatial distribution changes along the axis of the metal halide lamp in the horizontal orientation of the metal halide lamp.
- 10 2. Vehicle headlamp according to claim 1, wherein said vehicle headlamp comprises current-generating means for generating an average direct current inside the discharge vessel in a direction such that a transport of ionized particles is obtained in the direction of one of the electrodes nearest to the focal point of a reflector present in the headlamp.
- 15 3. Vehicle headlamp according to claim 2, wherein said vehicle headlamp comprises a ballast for controlling the operating power of the lamp in dependency on the strength of the average direct current, such as to obtain a predetermined maximum luminance level near one of the electrodes nearest to the focal point of the reflector.
- 20 4. Vehicle headlamp according to claim 2 or 3, wherein the discharge vessel is mirror symmetrical in shape, seen in cross-section.
5. Vehicle headlamp according to any of the preceding claims 1 through 4,  
25 wherein the discharge vessel is asymmetrical in shape, seen in cross-section.
6. Vehicle headlamp according to claim 5, wherein a first end part of the discharge vessel near one of the electrodes nearest to the focal point of the reflector differs in

geometry, diameter, length, circumference, cross-sectional area, surface, volume and/or type of material from a second end part of the discharge vessel near the other electrode.

7. Vehicle headlamp according to claim 6, wherein the distance from an  
5 electrode tip, that is nearest to the focal point of the reflector, to a bottom of the discharge vessel nearest to this electrode tip is larger than the distance from a tip of the other electrode to a bottom of the discharge vessel nearest to the latter electrode tip.
8. Vehicle headlamp according to any of the preceding claims 1 through 7,  
10 wherein the current-generating means do not generate the average direct current during running up of said metal halide lamp.
9. Vehicle headlamp according to any of the preceding claims 1 through 7,  
15 wherein the current-generating means generate a lower average direct current during running up of said metal halide lamp than during normal operation of said metal halide lamp, such that a predetermined maximum temperature of the electrodes during running up of said metal halide lamp is not exceeded.
10. Metal halide lamp to be used in a vehicle headlamp according to any of the  
20 preceding claims 1 through 9.